

# TL series

## Tiny washable toggle switches

*Distinctive features and specifications*



- Process sealed**
  - Single piece case
  - O-ring seal between actuator and bushing
  - Epoxy sealed terminals
- Wide variety of contact materials**
- Same PCB layout as TP, TR and TG tiny switches**

### ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - gold plated contacts : 0,4VA 20V max. AC or DC
  - silver plated contacts : 0,5A 48V max. AC or DC
- Minimum load : 10mA 50mV - 10 $\mu$ A 5VDC
- Contact resistance : 20 m $\Omega$  max.
- Insulation resistance : 1.000 M $\Omega$  min. at 500VDC
- Dielectric strength :
  - 1.000 Vrms 50 Hz min. between terminals and frame
  - 500 Vrms 50 Hz min. between terminals
- Electrical life at full load :

Contacts	Number of cycles	
	2 positions	3 positions
Gold plated	60.000	30.000
Silver plated	20.000	10.000

### MATERIALS

- Case : PBT
- Actuator : brass, nickel plated
- Contacts and terminals :
  - 0** : brass, gold plated
  - 1** : brass, silver plated
  - 3** : brass, gold plated (1,27 micron gold)
  - 8** : contact brass, gold plated + tin plated terminals
  - 9** : contact brass, gold plated (1,27 micron gold) + tin plated terminals
- Terminal seal : epoxy

### GENERAL SPECIFICATIONS

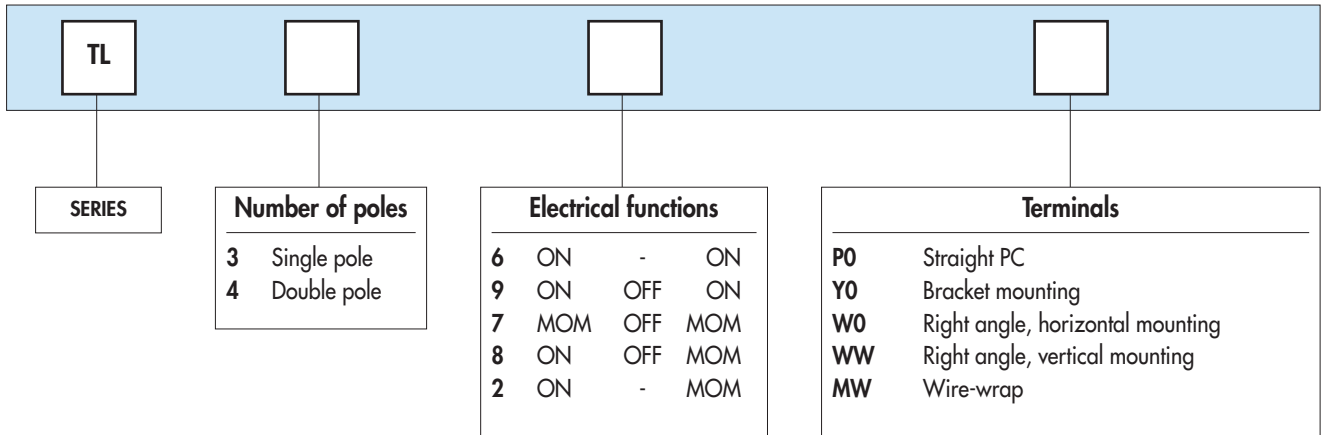
- Strength of terminals : pull-out force - 10N max.
- Operating temperature : -30°C to +85°C
- Moisture : 21 days 95 % (NFC 20-603 - IEC 68-2-3)
- Cleaning : solvents or water + detergent
- Wave soldering : 260°C - 5 sec.

# TL series

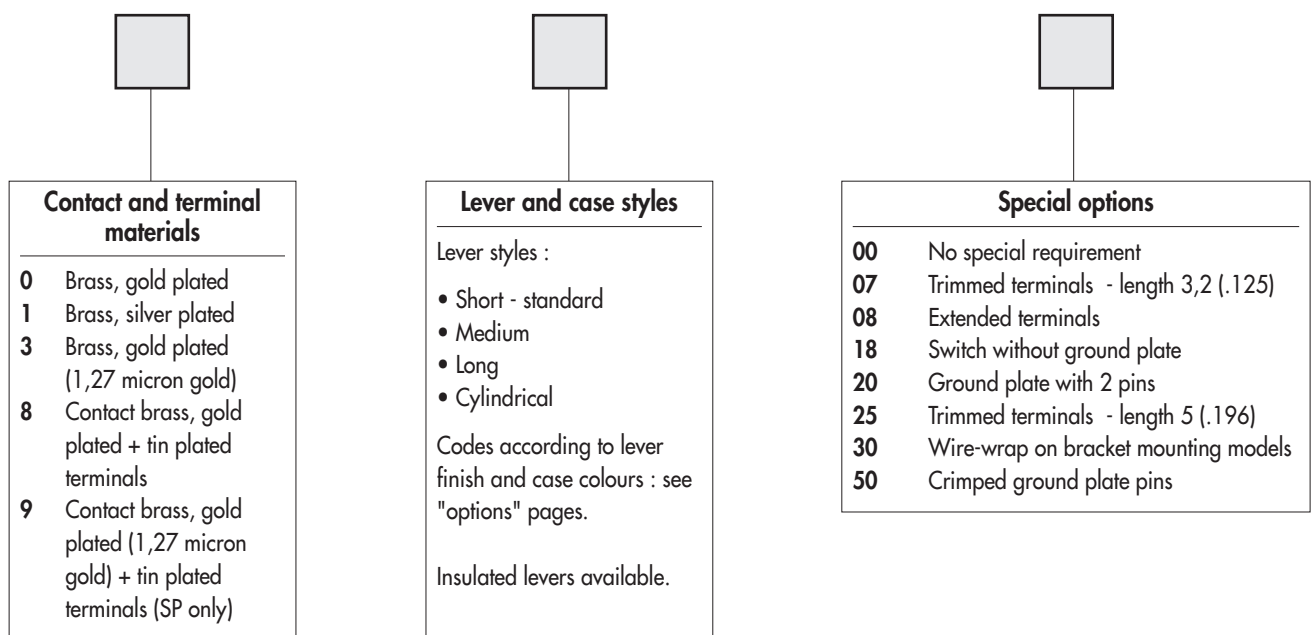
## Tiny washable toggle switches

Overview

MODEL  
STRUCTURE



OPTIONS



### ABOUT THIS SERIES

On the following pages, you will find successively :

- model structure of switches
- options in the same order as in above chart

**Dimensions** : first dimensions are in mm while inches are shown as bracketed numbers.



**NOTICE** : please note that not all combinations of above numbers are available. Refer to the following pages for further information.



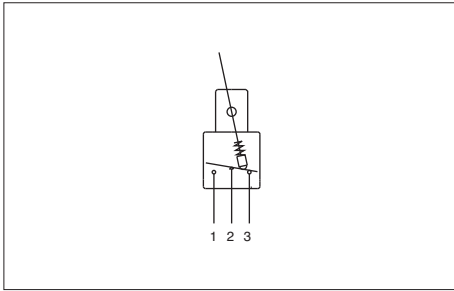
**Packaging unit** : 100 pieces, except for models with WW terminals (50 pieces)

# TL series

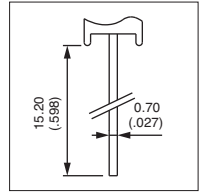
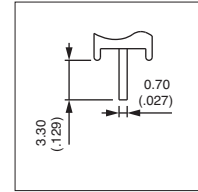
Tiny washable toggle switches



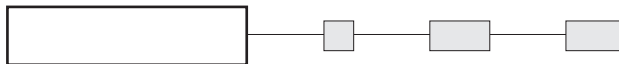
A



- Straight PC, right angle or wire-wrap terminals
- 1 and 2 pole configurations



MODEL STRUCTURE



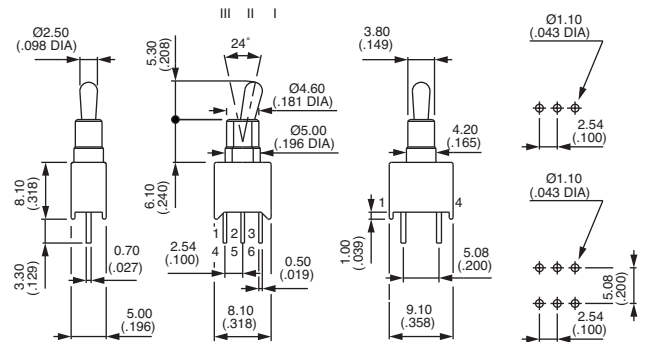
Shown with standard lever

## Straight PC terminals : TL..P0



Single pole	Double pole
TL36P0	TL46P0
TL39P0	TL49P0
TL37P0	TL47P0
TL38P0	TL48P0
TL32P0	TL42P0

III	II	I
ON	-	ON
ON	OFF	ON
MOM	OFF	MOM
ON	OFF	MOM
ON	-	MOM

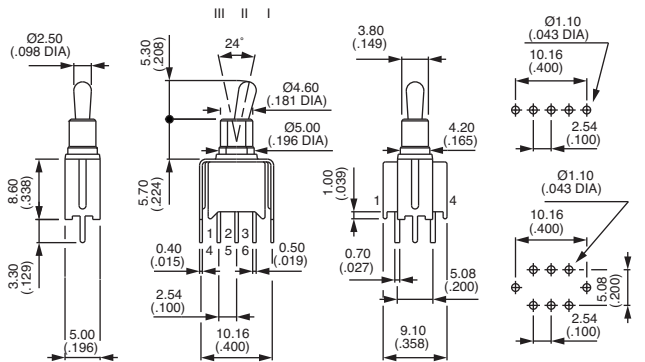


## Straight PC terminals - bracket mounting : TL..Y0



Single pole	Double pole
TL36Y0	TL46Y0
TL39Y0	TL49Y0
TL37Y0	TL47Y0
TL38Y0	TL48Y0
TL32Y0	TL42Y0

III	II	I
ON	-	ON
ON	OFF	ON
MOM	OFF	MOM
ON	OFF	MOM
ON	-	MOM

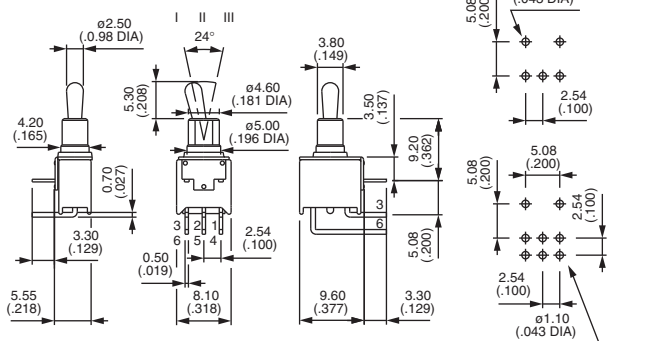


## Right angle terminals - horizontal mounting : TL..W0



Single pole	Double pole
TL36W0	TL46W0
TL39W0	TL49W0
TL37W0	TL47W0
TL38W0	TL48W0
TL32W0	TL42W0

III	II	I
ON	-	ON
ON	OFF	ON
MOM	OFF	MOM
ON	OFF	MOM
ON	-	MOM





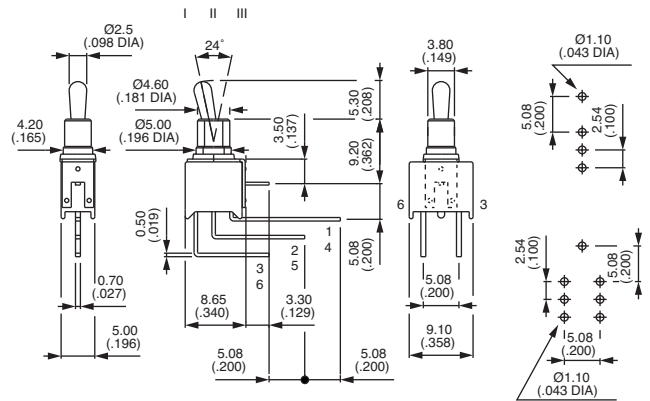
# TL series

Tiny washable toggle switches

## Right angle terminals - vertical mounting : TL..WW



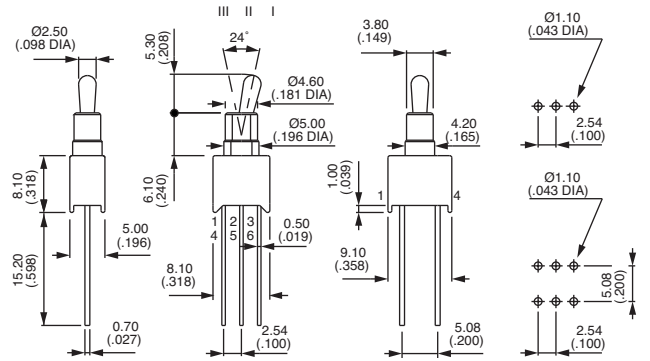
Single pole	Double pole	III	II	I
TL36WW	TL46WW	ON	-	ON
TL39WW	TL49WW	ON	OFF	ON
TL37WW	TL47WW	MOM	OFF	MOM
TL38WW*	TL48WW*	ON	OFF	MOM
TL32WW*	TL42WW*	ON	-	MOM



## Wire-wrap terminals : TL..MW

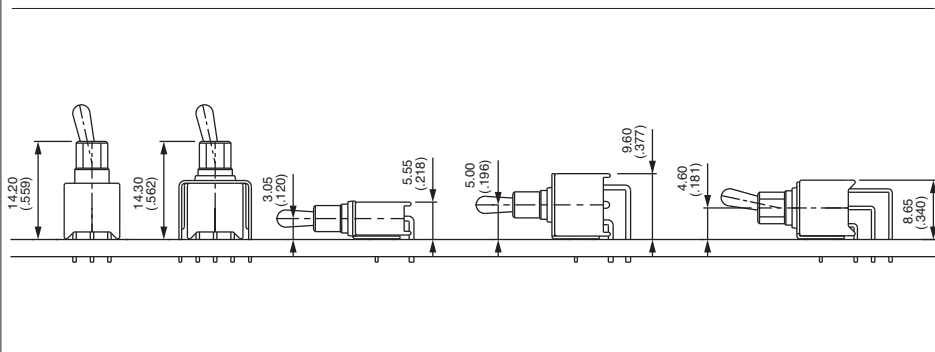


Single pole	Double pole	III	II	I
TL36MW	TL46MW	ON	-	ON
TL39MW	TL49MW	ON	OFF	ON
TL37MW	TL47MW	MOM	OFF	MOM
TL38MW	TL48MW	ON	OFF	MOM
TL32MW	TL42MW	ON	-	MOM



\* Functions 2 and 8 : reversed connection available. Consult factory.

## PCB MOUNTING



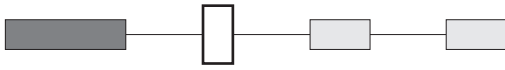
# TL series

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OPTIONS

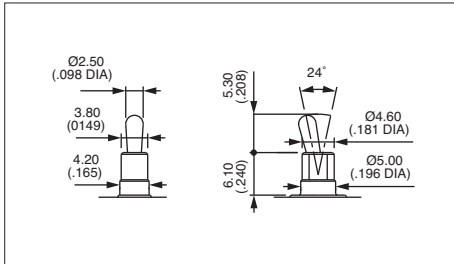
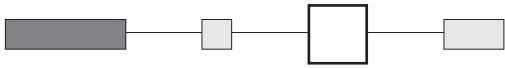


## CONTACT AND TERMINAL MATERIALS



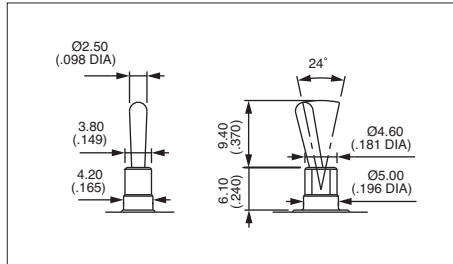
- 0 Brass, gold plated
- 1 Brass, silver plated
- 3 Brass, gold plated (1,27 micron gold)
- 8 Contact brass, gold plated + tin plated terminals
- 9 Contact brass, gold plated (1,27 micron gold) + tin plated terminals (single pole only)

## LEVER AND CASE STYLES



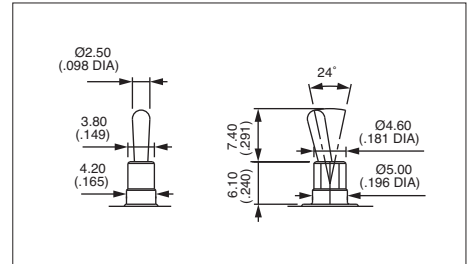
Short - standard

LEVER	CASE	
	Blue	Black
Nickel plated	<b>00</b>	<b>50</b>
Matt black	<b>01</b>	<b>51</b>



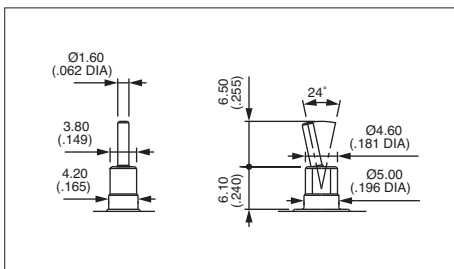
Long

LEVER	CASE	
	Blue	Black
Nickel plated	<b>02</b>	<b>52</b>
Matt black	<b>03</b>	<b>53</b>



Medium

LEVER	CASE	
	Blue	Black
Nickel plated	<b>04</b>	<b>54</b>
Matt black	<b>05</b>	<b>55</b>



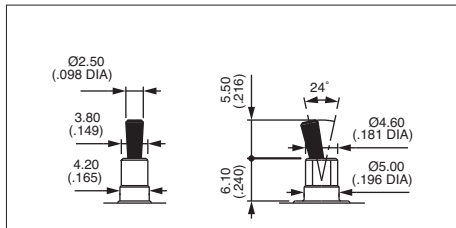
Cylindrical

LEVER	CASE	
	Blue	Black
Nickel plated	-	<b>56</b>

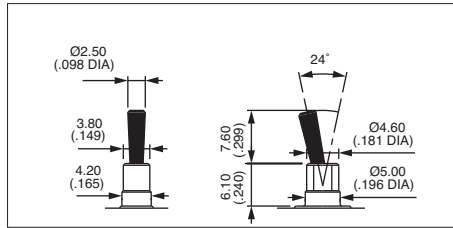


## LEVER AND CASE STYLES (continued)

**Insulated levers** - Protected against electrostatic discharges (ESD) up to 10KV. Black colour.

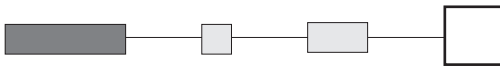


**40** With blue case  
**94** With black case

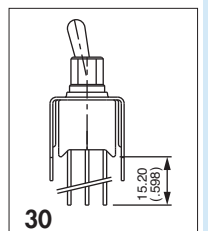
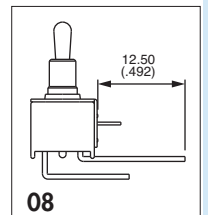
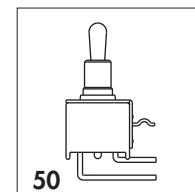
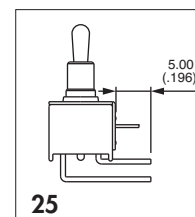
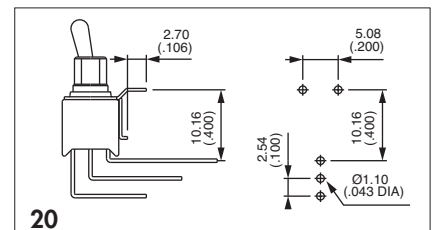
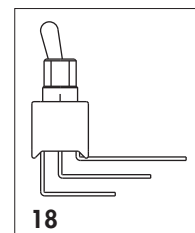
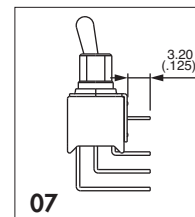


**30** With blue case  
**90** With black case

## SPECIAL OPTIONS



- 00** No special requirement
- 07** **Trimmed terminals** - length 3,2 mm (.125) for TL..WW models only
- 08** **Extended terminals** for TL..WO models only
- 18** Switch **without ground plate** for TL..WW models only
- 20** **Ground plate with 2 pins** for TL..WW models only
- 25** **Trimmed terminals** - length 5 mm (.196) for all models, except TL..WW
- 30** **Wire-wrap terminals** on models with mounting **bracket**
- 50** **Crimped ground plate pins.**  
Retains switch on PCB during handling and wave soldering.  
For models TL..WO, TL..WW and TL..YO single and double pole.



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